Average accumulated departures for April, 1916.

Districts.	Temperature.			Precipitation.			Cloudiness.		Relative humidity.	
	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure from the normal.	General mean for the current month.	Departure from the normal.
	°F.	°F.	°F.	Ins.	Ins.	Ins.	Per ct.		Per ct.	
New England	43.3	−0.4	− 4.3	3.19	−0.10	−2.50	6.6	+1.1	76	+ 3
Middle Atlantic	50.4	−0.3	− 0.1	2.44	+0.20	−1.40	6.2	+1.0	68	+ 1
South Atlantic	61.0	−0.2	+ 6.6	1.88	−1.60	−7.30	4.3	−0.3	64	− 8
Florida Peninsula	71.0	−2.4	− 1.1	1.23	−0.70	−5.10	4.0	+0.2	73	− 1
East Gulf	63.3	−1.3	+ 4.5	2.73	−1.30	−8.50	4.3	−0.6	66	− 4
West Gulf	63.5	−2.2	+ 8.2	3.63	+0.10	−2.40	5.3	+0.2	71	− 1
Ohio Valley and Tennessee	53.3	−1.4	+ 0.3	2.34	−1.20	−1.10	6.7	+1.4	67	+ 2
Lower Lakes	45.5	+0.4	− 2.4	2.34	0.00	+0.60	6.5	+0.8	75	+ 5
Upper Lakes	41.8	+1.0	− 2.6	2.59	+0.30	+0.90	6.3	+0.8	76	+ 3
North Dakota	39.7	−1.0	−10.9	1.52	−0.40	+0.50	5.6	+0.3	60	− 8
Upper Mississippi Valley	49.3	−1.2	+ 0.5	2.46	−0.50	+0.60	4.9	−0.3	68	0
Missouri Valley	48.8	−1.6	+ 0.5	2.35	−0.50	−2.80	6.3	+0.7	63	− 2
Northern slope	43.4	+0.6	− 3.8	0.82	−0.80	−0.70	4.5	−0.6	61	+ 3
Middle slope	50.5	−3.2	+ 1.8	2.60	−0.40	−0.80	6.1	+1.5	66	+ 9
Southern slope	60.2	−2.2	+12.5	2.31	+0.40	−0.80	4.3	−0.4	48	− 7
Southern Plateau	58.6	−0.8	+ 3.8	0.52	0.00	+1.80	2.6	−0.2	40	+10
Middle Plateau	50.3	+1.4	+ 4.9	0.38	−0.80	+0.60	4.1	−0.4	42	− 3
Northern Plateau	49.8	+0.8	− 2.7	0.97	−0.40	+1.10	4.5	−0.7	53	− 4
North Pacific	49.6	+0.5	− 3.9	3.33	+0.10	+5.50	6.6	+0.4	77	+ 6
Middle Pacific	56.3	+2.7	+ 4.8	0.36	−1.70	+1.10	2.6	−1.8	63	− 9
South Pacific	61.0	+3.0	+ 4.8	0.06	−1.00	+5.20	2.5	−1.5	69	+ 1

WEATHER CONDITIONS ON THE NORTH ATLANTIC DURING APRIL, 1915.

The data presented are for April, 1915, and comparison and study of the same should be in connection with those appearing in the REVIEW for that month. Chart IX (XLIV–54) shows for April, 1915, the averages of pressure, temperature, and the prevailing direction of the wind at 7 a. m., 75th Meridian time, together with the locations and courses of the more severe storms of the month.

PRESSURE.

The average pressure for the month over the ocean as a whole was somewhat above the normal. The Azores high, with a crest of 30.3 inches, was not far from its usual position, while the Continental HIGH, crest of 30.1 inches, was central near Asheville, N. C., extending as far east as the 74th meridian. The isobar of the lowest mean pressure, 29.7, inches, was about 5 degrees north of its usual position as it appears on the Meteorological Chart of the North Atlantic Ocean showing normal pressure for April.

North of the fiftieth parallel the pressure was much lower during the first decade of the month than in the last 20 days, and in the regions between the sixtieth and sixty-fifth parallels, and the 1st and 20th meridians, west longitude, the mean pressure for the first 10 days ranged between 29.25 and 29.34 inches, while the average for the month was from 29.69 to 29.72 inches. The same conditions held true over the greater part of the ocean, although in the area covered by the Azores HIGH the mean pressure for the first decade was greater than that for the month.

STORMS.

North of the fiftieth parallel most of the heavy winds occurred in the first half of the month, while south of that line they were fairly well distributed throughout the month. The greatest number of gales observed in any 5-degree square was 7, a percentage of 23, and occurred in three different localities. Over the ocean as a whole the number of gales was slightly above the average, although there were a few exceptions.

On March 31 a LOW (I on Chart IX) of 28.60 inches was central near St. Johns, Newfoundland, winds of over 60 miles an hour prevailing near its center, while several vessels reported strong gales between St. Johns and the 30th Meridian. This disturbance moved in a southerly direction and on April 1 was near latitude 39°, longitude 55°, the barometer having risen to 29.26 inches while the wind still retained its force. The storm then recurved toward the northeast, and increasing in its rate of movement was near latitude 51°, longitude 37°, on the 2d. The barometer then began to rise and the storm area to increase, while its intensity decreased, although a number of vessels south of the center encountered westerly and southwesterly winds of gale force. The LOW continued in its northeasterly course with a nearly constant rate of movement, and on the 3d the approximate position of the center was latitude 49°, longitude 20°, although it was impossible to locate it accurately on account of the lack of observations. The barometer had fallen, however, to 28.90 inches, and westerly and southwesterly winds of over 60 miles an hour, accompanied by hail, were reported. It evidently continued on its northeasterly course, as evidences of its presence could still be seen on the 4th, although it was impossible to plot the center. On the 2d there was a large and rather shallow area of low pressure (II on Chart IX) central near Habana, Cuba. The winds ranged from light to moderate, with a minimum barometer reading of 29.80 inches. This LOW traveled swiftly in a northeasterly direction, gaining in intensity, and on the 3d was about 4 degrees east of Hatteras, winds of from 50 to 65 miles, accompanied by hail and snow, prevailing within the storm area. The storm continued in its northeasterly movement, parallel to the coast, and on the 4th the center was about 5 degrees east of Nantucket, the conditions of wind and weather remaining about the same as on the day before, although the storm area was of greater extent, winds of gale force being reported as far east as the 50th Meridian. From this point the area of low pressure spread out to such a degree that it was impossible to locate its center. On the 5th, winds of gale force prevailed over the central portion of the northern sailing routes and also near latitude 58°, longitude 13° west.

Between April 6 and 9 an area of low pressure covered a large portion of the North Sea and the adjacent mainland of Europe, gales being reported during the first three days of that period, but the wind moderated on the 9th. From the 10th to the 16th no serious disturbances were reported over the North Atlantic and moderate to light winds prevailed over the entire area.

On April 17 a LOW (III on Chart IX) appeared about 3 degrees west of Bermuda. Two vessels near the center reported north and northeast winds of from 40 to 50 miles an hour, while between the 68th meridian and the American coast light airs and clear weather prevailed. This disturbance moved in a northeasterly direction, increasing in extent and violence, and on the 18th was near latitude 37°, longitude 63°, strong gales of over 60 miles an hour being reported by two vessels. While the storm covered a larger territory than on the previous day, it was still of limited extent, as only moderate winds were reported from the waters adjacent to the American coast. The LOW continued in its northeasterly course and on the 19th was near latitude 40°, longitude 62°, with gales pre-

vailing near the center, although as on the previous day the storm area was limited. The disturbance then turned toward the north and on the 20th was central in the Gulf of St. Lawrence, with a minimum barometer reading of 29.35 inches. A HIGH with a crest of 30.6 inches was near latitude 45°, longitude 30°, at the same time and the steep gradient between these two areas caused heavy winds in the intermediate region. By the 21st the center of the LOW had moved about 7 degrees east of its position on the 20th, the barometer having risen, and the wind decreased in force. The conditions of wind and weather during the remainder of the month was practically normal, as no unusual disturbances were reported.

TEMPERATURE.

Over the ocean as a whole, north of the 30th parallel, the temperatures were somewhat above the normal, although in most cases the departures were small. In the waters adjacent to the European coast they ranged from 0° off the coast of Scotland to +3° between the 35th and 40th parallels, while in midocean the extreme range was from −1° to +4°. In the waters adjacent to southern Canada and the northern part of the United States the temperature was from 2 to 4 degrees above the normal, the excess decreasing southward to 0 degrees off the coast of South Carolina, south of which point the departures were negative. The temperature departures at a number of Canadian and United States Weather Bureau Stations on the Atlantic and Gulf coasts were as follows: St. Johns, N. F., +4.3°; Sydney, C. B. I., +3.2°; Halifax, N. S., +3.2°; Eastport, +1.3°; Portland, +2.8°; Nantucket, +1.3°; New York, +5.3°; Washington, +6.3°; Norfolk, +4.2°; Hatteras, +1.2°; Charleston, −0.5°; Miami, −4.7°; Key West, −3.3°; Pensacola, −1.7°; New Orleans, +0.9°; Galveston, −2.6°; Corpus Christi, −2.5°.

The lowest temperature reported during the month was 18° and occurred on the 9th and 10th in the five-degree square between latitude 50°–55° and longitude 55°–60°. The highest temperature recorded was 82° and occurred on several days in the waters adjacent to the Panama Canal Zone.

FOG.

During the period from 1901 to 1906, for the month of April, the average percentage of fog off the banks of Newfoundland was 40 or more. In the same locality for April, 1915, fog was observed on 10 days, a percentage of 33. In the waters adjacent to the American coast between the 40th and 45th parallels the normal percentage is from 20 to 30, while for the month under discussion it was observed on 10 days, a percentage of 33. Along the sailing routes the amount of fog varied but little from the normal, as it was slightly above in some localities and below in others.

PRECIPITATION.

Hail occurred on the 3d, 4th, 5th, 6th, 7th, 8th, 9th, and 20th on the northern sailing routes and snow on the 2d, 3d, 4th, 6th, 24th, and 25th.

Maximum wind velocities, April, 1916.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
		Mls./hr.				*Mls./hr.*	
Buffalo, N. Y.	6	52	sw.	New York, N. Y.	12	54	nw.
Do.	14	56	w.	Do.	14	72	nw.
Do.	20	52	w.	Do.	15	50	n.
Cape May, N. J.	15	50	nw.	Do.	18	72	nw.
Columbia	17	51	nw.	Norfolk, Va.	14	62	w.
Dayton, Ohio	20	52	sw.	North Head, Wash	16	48	s.
Duluth, Minn.	19	53	ne.	Do.	17	60	s.
Eastport, Me.	9	50	ne.	Do.	26	70	se.
Erie, Pa.	20	52	w.	Oklahoma, Okla.	29	50	s.
Louisville, Ky.	24	52	w.	Pittsburgh, Pa.	14	52	nw.
Lexington, Ky.	20	56	w.	Do.	17	50	w.
Lynchburg, Va.	14	51	nw.	Pensacola, Fla.	7	52	s.
Mt. Tamalpais, Cal	10	84	nw.	Point Reyes			
Do.	11	84	nw.	Light, Cal.	10	64	nw.
Do.	12	56	n.	Do.	11	87	nw.
Do.	13	52	n.	Do.	12	51	nw.
Do.	14	61	nw.	Do.	14	61	nw.
Do.	15	71	nw.	Do.	17	50	nw.
Do.	17	83	nw.	Do.	20	50	nw.
Do.	18	80	nw.	Do.	28	64	nw.
Do.	21	62	nw.	Sandy Hook, N. J.	14	59	nw.
Do.	22	61	nw.	Do.	18	52	nw.
Do.	27	68	nw.	St. Paul, Minn.	19	64	e.
Do.	28	70	nw.	Trenton, N. J.	14	52	nw.
Do.	20	56	nw.	Do.	18	50	nw.
Nantucket, Mass.	14	50	n.	Toledo, Ohio	17	58	w.
Nashville, Tenn.	20	62	w.				